

## The National Energy Modeling System: An Overview 2003

### Freight Truck Technology Characteristics

	Fuel Economy Improvement (percent)		Maximum Penetration (percent)		Introduction Year		Capital Cost (2001 dollars)	
	Medium	Heavy	Medium	Heavy	Medium	Heavy	Medium	Heavy
Aero Dynamics: bumper, underside air baffles, wheel well covers	2.3	2.7	50	66	2005	2005	\$280	\$550
Low rolling resistance tires	3.6	2.3	50	40	2004	2005	\$800	\$1,500
Transmission: lock-up, electronic controls, reduced friction	1.8	1.8	100	100	2005	2005	\$900	\$1,000
Diesel Engine: hybrid electric powertrain	36.0	N/A	15	N/A	2010	N/A	\$8,000	N/A
Reduce waste heat, thermal mgmt	N/A	9.0	N/A	35	N/A	2010	N/A	\$2,000
Gasoline Engine:								
Direct injection	10.8	N/A	25	N/A	2008	N/A	\$700	N/A
Weight Reduction	4.5	9.0	20	30	2007	2005	\$2,000	\$2,000
Diesel Emission NO <sub>x</sub> non-thermal plasma catalyst	-1.5	-1.5	25	25	2006	2007	\$1,200	\$1,250
PM catalytic filter	-2.5	-1.5	95	95	2006	2006	\$1,250	\$1,500
HC/CO: oxidation catalyst	-0.5	-0.5	95	95	2002	2002	\$200	\$250
NO <sub>x</sub> adsorbers	-3.0	-3.0	90	90	2006	2007	\$2,000	\$2,500